HIV risk behaviours and factors affecting the use of condoms among Men who have Sex with Men (MSM) in selected districts of Sri Lanka; A baseline cross sectional study

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Programme (NSACP) since the first local case detected in 1987. (2) However, the country cannot be complacent about the numbers because, Sri Lanka is one of the few countries where the number of new infections is on the rise in the South East Asia (3). The estimated rise of new infections from 2001 to 2011 was 70% in Sri Lanka (3). HIV surveillance system of the NSACP is constantly looking at some of key populations for possible outbreak of HIV since the first round of HIV sentinel survey carried out in 1990. (2) HIV prevalence pattern among MSM has gone up from 0.0% in 2007 to 0.5% in 2009 and further it has gone up to 0.9% in 2011. The mapping and size estimation study carried out in 2009/10 revealed that the estimated number of MSM in the country was 31,000 (24,000-37,000).

In this background, this study was conducted from June to August 2012 as a baseline survey of the Global Fund - Round 9 HIV prevention programme which is to be implemented targeting most at risk populations (MARP) for HIV prevention in Sri Lanka especially female sex workers (FSW), men who have sex with men (MSM), beach boys (BB) and drug users (DU). The main objectives of this study are to identify HIV risk behaviours and practices among MSM in selected districts and to identify factors affecting the use of condoms.

Method

Among 25 districts of the country five districts (Anuradhapura, Colombo, Galle, Gampaha and Kalutara districts) were purposely selected for this study as they were the selected districts to conduct the project activities under the HIV component of the Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM) grant round 9 phase I, aligned with national strategic plan for HIV and STI control in Sri Lanka. From the selected areas of the project a total of 961 MSM were recruited as the sample. District level sample size was determined considering the relative proportions of the male population of each district (table 1). Snowball sampling technique with multiple district level seeds was used to enroll the potential participants.

Data were collected by using an interviewer administered, standardized questionnaire which was pretested for clarity, ambiguity, timing and sequence of questioning. Questionnaires were administered through selected MSM in each district as peer educators (PE) of the project. Total of 100 peer educators (Anuradhapura-20, Colombo-30, Galle-15, Gampaha-20 and Kalutara-15) were specially trained for the baseline data collection process and their activities were supervised by another seven (7) field supervisors.

Table 1: Sample sizes and percent of sample sizes taken from each selected districts

Districts selected for sampling	Sample size	Sample as percent of total
Anuradhapura	194	20.2%
Colombo	277	28.9%
Galle	145	15.1%
Gampaha	209	21.8%
Kalutara	135	14%
Total sample size	961	100

The peer educators were clearly explained to provide adequate information on the purpose, confidentiality and anonymity of data and participation voluntarism before getting their consent for the study. After taking the respondents consent, the data were collected and recorded on the questionnaires which were later checked by the field supervisors for clarity and completeness.

Data Analysis

The collected data was primarily analyzed using the Microsoft excel software in order to arrange them in a meaningful way. Then SPSS and STATA; two statistical software were used to perform statistical analysis. The socioeconomic demographic data of the respondents were scientifically analyzed with respect to the respondents' status of condom usage. The parametric statistical methods such as t-test, Chi-squire test and the logistic regression were used for the analysis.

Results

Socio-demographic characteristics

The socio-demographic characteristics of the sample shows that majority of respondents were in the age category of ≥25 years (71%) while the 29% were in the less than 25 years age group. The mean age of the sample was 30.4 years (range 16-18 years, SD=9.26 years). Almost half of them were urban dwellers (49.4%). Heterosexual marriages were present in 33% of the sample showing the proportion of MSM who could possibly transmit infection to the

Table 2: Descriptive statistics – socio-demographic characteristics of respondents

Category	Category	Count	Percent
Age	<14 years	0	0%
	14-24	278	28.9%
	25-59	676	70.3%
	>59	7	0.7%
	Total	961	100%
Geography	Rural	315	16.1%
	Semi urban	330	34.4%
	Urban	316	49.4%
	Total	961	100%
Marital status	Never married	606	65.93%
	Married	208	24.4%
	living together	58	6.14%
	Divorced	23	2.5%
	Total	895	100%
Level of education	No education	19	2.5%
	Up to grade 5	28	3.1%
	Up to grade 8	75	8.3%
	Up to O/L	393	43%
	A/L and above	394	43%
	Total	909	100%
Occupation	Labourer/driver	217	53.58%
	Unemployed	85	20.98%
	Beauty culture/saloon	70	17.28%
	Commercial sex work	33	8.14%
	Total	405	100%

general population (bridging population of MSM). Nearly half of them were educated up to the level of General Certificate of Education (Advanced level) which is equal to 13 years of school education. One of the important findings of the study is that, 33 respondents (4.93%) have indicated the commercial sex work as their occupation. Table 2 explains the descriptive statistics of the sample.

The Durations of the Sexual Behavior

The duration of the respondents' sexual behavior as MSM, ranges from <1 year to 60 years. One fourth (25.09%) of respondents had less than 6 years of MSM behaviours while almost another one forth (23.27%) had 6-10 years of experience. Overall, majority (71%) of them had less 15 years of experience as an MSM (Table 3).

Type and number of sex partners

Majority of them (63%) had sex only with male partners while 31% of them had sex with both males and females during the last month representing the proportion of bridging population within the sample. The average number of local (Sri Lankan) and foreign male partners during the last month was 7 (range 0-84) and 2 (range 0-10) respectively while the same figure for female partners was 2 (range 0-15). Distribution of number of partners according to the category of numbers is mentioned in the table 3. This study reveals that around 21% of the respondents have had only receptive anal sex during the last month. Another 23% of the respondents have had only penetrative anal sex during the last month. More than one third of (39%) of the respondents have had both receptive and penetrative sex, while remaining portion of respondents have had no any kind of anal sexual encounters during the last month (Table 3).

Condom use

Condom use at last sex with males was 40%. More than three fourth (76.88%) of the respondents had mentioned that either they did not use a condom during the last sex with a female or they have never had sex with a female. These findings reveal that majority MSM (60%) do not have consistent condom use.

Table 3: Sexual behavior characteristics

Category	Category	Count	Percent
Duration of MSM behavior	< 6 years	221	25.1%
	6-10 years	205	23.3%
	11-15 years	200	22.7%
	16-20 years	138	15.7%
	>20 years	117	13.3%
	Total	881	100%
Sexual encounters during last month	No	46	5%
	only with males	576	63.1%
	both males and females	283	31%
	only with females	08	0.9%
	Total	913	100%
Number of male sexual partners during the last month	No	45	4.9%
	1	64	7.1%
	2 to 5	384	42.5%
	6 to 10	254	28.1%
	above 10	157	17.4%
	Total	904	100%

Number of foreign male sexual partners during last month	No		848	93.8%
	1		25	2.8%
	2 to 5		28	3.1%
	6 to 10		3	0.3%
	above 10		0	0.0%
		Total	904	100%
Number of female sexual partners during the last month	No		622	68.1%
	1		157	17.2%
	2 to 5		116	12.7%
	6 to 10		14	1.5%
	above 10		4	0.4%
		Total	913	
Number of foreign female sexual partners during last month	No		890	97.5%
	1		8	0.9%
	2 to 5		15	1.6%
	6 to 10		0	0.0%
	above 10		0	0.0%
		Total	913	100%
Type of anal sex had during the last month	only receptive anal sex		192	21%
	only penetrative anal sex		215	23%
	both receptive and penetrative anal sex		360	39%
	No anal sex encounters		146	15%
		Total	913	100%
Condom use at last sex with males	did not use		518	59.9%
	used a condom		347	40.1%
Condom use at last sex with females	did not use a condom or never had sex with females		665	76.9%
	used a condom		248	28.7

Characteristics of condom users and non-users

There is no significant relationship between condom users and non-users in relation to age, number of male or female partners. Those who have longer duration of MSM behavior show a tendency to use condoms. It shows that years of school education among MSM has negative result on use of condoms (table 4a)

Table 4a: Comparison of variables between condom users and non-users for the difference

Category	Condom users at last sex with males; mean; (95% CI) (n=347)	Condom non users at last sex with males; mean ; (95% CI) (n=566)	Significane
Mean age in years	31.0 (30.1-31.9)	30.0 (29.3-30.7)	p= 0.1018
Duration of MSM behaviour in years	13.2 (12.2-14.1)	11.8 (11.1-12.5)	p= 0.0186*
Years of education	10.6 (10.2-10.9)	11.6 (11.34-11.8)	p= 0.0001*
No. of male sexual partners	9.1 (7.1 – 11.2)	6.6 (6.0 – 7.3)	p= 0.065
No. female sexual partners	0.7 (0.5 – 0.9)	0.7 (0.5 - 0.8)	p= 0.6423

**significant by t-test at a =0.05*

In order to find out the relationship between the condom usage with the, geographical location, extent of urbanization, marital status, number of penetrative anal sex, number of receptive anal sex, status of taking treatment for STI, the Pearson chi squired test was performed for each of above variables separately. The results reveal that all above variables except number of penetrative anal sex during the last month has a relationship with the usage of condoms during the sex with males.

Table 4b: Comparison of variables between condom users and non-users for the association

Variables	Value categories	Condom users at last sex with males; count (percent)	Condom non users at last sex with males; count (percent)	significance
District	Anuradhapura	35 (24%)	113 (76%)	Pearson chi2(4)
	Colombo	143 (52%)	131 (48%)	= 46.3232
	Galle	43 (29%)	109 (31%)	P=0.000**
	Gampaha	73 (36%)	132 (34%)	
	Kalutara	53 (40%)	81 (60%)	
	Total	347 (100%)	566 (100%)	
Extent of Urbanization	Rural	86 (30%)	200 (70%)	Pearson chi2(2)
	Semi-Urban	136 (42%)	188 (58%)	= 9.9759
	Urban	125 (41%)	178 (59%)	P= 0.007**
	Total	347 (100%)	561 (100%)	
Marital status	Married	44 (31%)	141(69%)	Pearson chi2(4)
	Unmarried	222(36%)	384 (74%)	= 32.7941P
	Living together	40 (68%	18 (32%)	=0.000**
	Divorced	10 (43%)	13 (57%)	
	Widow	4 (67%)	2 (33%)	
	Total	320 (100%)	558 (100%)	
Number of penetrative anal sex during last month	None	132 (39%)	206 (61%)	Pearson chi2(3)
	01 to 06	137 (36%)	243 (64%)	= 0.8785
	07 to 10	44 (40%)	65 (60%)	P=0.831
	Above 10	34 (40%)	52 (60%)	
	Total	347 (100%)	566 (100%)	

Number of receptive anal sex during last month	None	104 (29%)	257 (71%)	Pearson chi2(3) = 16.1333 P=0.001**
	01 to 06	119 (39%)	187 (61%)	
	07 to 10	49 (45%)	59 (55%)	
	Above 10	75 (54%)	63 (46%)	
	Total	347 (100%)	566 (100%)	
Number of MSM tested for HIV during last 12 months	None	194 (28%)	505 (72%)	Pearson chi2(1) = 126.5161 P=0.000**
	Yes	153 (72%)	61(28%)	
	Total	347 (100%)	566 (100%)	

Further, a logistic regression was performed to identify the factors affecting the status of condom usage by the respondents. As shown in the table 05, the results of the logistic regression indicated that the level of education, number of receptive anal sexual encounters during the last month, status of taking treatment for a STI (whether the respondent had taken treatment for STI during their lifetime), had a statistically significant effect on status of condom usage (CI=95%). Among those three factors level of education indicated a negative effect on the usage of condoms while other two factors indicated a positive effect on the condom usage. Other factors such as extent of urbanization, district, age, marital status, duration in MSM behavior, number of male sexual partners, number of female sexual partners, number of penetrative anal sexual encounters, did not have a statistically significant effect on status of condom use (CI=95%).

Discussion

The sample shows that majority of respondents (71%) were in the age category of ≥25 years (mean age 30.4 years, SD=9.26 years). The ages of majority of respondents in various MSMs studied carried out in Sri Lanka were in their twenties or early thirties (4) (5) (6). This may be due to the true picture or sampling error because of non-probability sampling techniques used in this type of hidden populations.

In this study, the average male partner exchange rate during the last month was 9, while the same figure for female was 2. In 2006-2007 Behavioural Surveillence Survey (BSS), on average, respondents had 0.9 regular male partners and almost 8.8 non regular partners in the previous year (as calculated for the full sample). 2008 MSM study-Anuradhapura, showed that the average male partner exchange rate

Table 5: Results of the logistic regression for status of condom usage

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Logistic regression                               Number of obs   =        892
                                                  LR chi2(12)     =      64.13
                                                  Prob > chi2     =     0.0000
Log likelihood = -559.81013                       Pseudo R2       =     0.0542
```

CONDOMuse	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Location	.2720568	.1649971	1.65	0.099	-.0513316	.5954452
District	.0359696	.058771	0.61	0.541	-.0792195	.1511587
Age	-.0074481	.0121517	-0.61	0.540	-.031265	.0163687
MatitalSTA~S	-.1214882	.1037967	-1.17	0.242	-.3249261	.0819497
education	-.0820574	.0252211	-3.25	0.001	-.1314898	-.0326251
Duration	.0089221	.0127088	0.70	0.483	-.0159867	.0338308
MalePARTNERS	.0116539	.0106719	1.09	0.275	-.0092626	.0325704
FemalePART~S	.0508231	.0486516	1.04	0.296	-.0445324	.1461785
Receptive	.2920095	.0779132	3.75	0.000	.1393024	.4447166
penetrative	.0281544	.0845956	0.33	0.739	-.1376499	.1939588
SexualENCO~S	-.0048708	.0100571	-0.48	0.628	-.0245825	.0148408
Treatment	.7546428	.3227934	2.34	0.019	.1219793	1.387306
_cons	-.0496898	.6639628	-0.07	0.940	-1.351033	1.251653

in the previous year was 7 (0.26 regular male partners and 6.68 non-regular male partners) and the average female partner exchange rate per year was 4 (0.39 regular female partners and 3.5 non-regular female partners) (4) In India, the mean number of commercial partners of MSM ranged from 3.6-25.2 in the past six months, In Indonesia, the number of male partners of MSM varied from 2-10 (7). This study shows relatively high rate of partner change. This may be due to the fact that the sample represents high risk MSMs and/or the presence of 5% of male commercial sex workers in the sample.

It is mentioned in the report of the Commission on AIDS in Asia, that about 60% of most-at-risk populations need to adopt safer behaviours, if HIV epidemics are to be reversed. To achieve that level of behavior change, service coverage has to reach at least 80%. (8) According to this baseline study, the condom use at last sex was 40% which need to be improved at least over 60% to reduce the rate of new infections. On the other hand, coverage of reach is also not adequate when compared with the moving estimates of MSMs in the country. One third to two third of MSM across South-East Asia reported not using condoms during the last episode of anal sex with a male partner. In 2010, according to the country reports, condom use at last sex with a male partner varied from 22% in Bangladesh to 82% in Myanmar, 88% in Nepal, 50% in Sri Lanka, 65% in Thailand and 52% in Timor-Leste (7) In South-East Asia, although many countries in the region are focusing on increasing the coverage of interventions for safer sexual behaviours, the magnitude of the current prevention programmes for MSM is highly inadequate. The reported median regional prevention coverage was 49% for MSM while the global median coverage was at 58% (7) It is recommended by the team of external review of the national response to HIV in Sri Lanka that the country should use the financial resources from the Global Fund grants to continue and increase reach and coverage of MSM in the country (9)

This study also reveals that the proportion of penetrative and receptive anal sex was 23% and 21% during the last month. More than one third of (39%) of the respondents have had both receptive and penetrative sex, while remaining portion of respondents have had no anal sexual encounters during the last month. In 2006/07 BSS, the average number of partners for insertive anal sex was 11.7 and for receptive anal intercourse 12.5 in the last year

Proportion of bridging population (males to females) was 31% in this baseline study during the last month. In the BSS 2006-2007, 23% of MSM had sexual intercourse with a woman in the previous year which suggest an additional risk of transmission to other populations

In this baseline study, when the characteristics of condom users and non-users at last sex were compared in the multivariate analysis, those who are having receptive anal sex and who have taken treatment for STIs were more likely to use condoms. But it is questionable that the higher level of education indicated a negative effect on the usage of condoms which needed to be tested further for the consistency of the finding

Conclusions

MSM in the sample had relatively high to moderate rate of male partner exchange with low rate of condom use at last sex (40%) indicating a substantial HIV risk behaviours. The presence of considerable proportion of bridging population (31%) further suggests an additional risk of cross-population transmission. The level of condom use was inadequate to reverse a possible increase in new infections among MSM. It has been shown in this study that the experience of an STI is one of the most influencing factors for them to use a condom which is a too late situation as far as HIV prevention is concerned. MSM who are having receptive anal sex has relatively high tendency to use condoms probably due to perceived risk. However, in this study, a higher level of education indicated a negative effect on the usage of

condoms which needed to be tested further for the consistency of the finding.

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Conflict of interest

No conflict of interest

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